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# MIDYEAR ON THE FOOD FRONT

## THE

# AGRICULTURAL

# • SITUATION •

JULY 1942

*A Brief Summary of Economic Conditions*

Issued Monthly by the Bureau of Agricultural Economics, United States Department of Agriculture

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INTEREST turns at midyear to the acreage and production of crops. Larger acreages of food and feed crops have been planted this year; given good weather, the final outturn of crops should be considerably larger than in 1941. Meanwhile, the production of meats, milk and eggs continues to set new high records for this time of year, and the biggest spring pig crop on record to be marketed next fall and winter was reported by BAE last month. \* \* \* Nineteen forty-two is a year of heavier work on the farms as producers with a diminished force of experienced farm help strive to achieve food production goals. Many women, boys and girls are working on the farms this summer. All are doing a creditable job, as revealed by mounting production figures. \* \* \* Prices received for farm commodities and prices paid by farmers for production goods continue to hold in good balance, yielding a national average of approximate parity. A number of farm products—notably the crops—are selling below parity, but the difference—as in the case of wheat and corn—is being made up by Government payments. Cash farm income this year will likely be the largest on record. The previous top was 14.4 billion dollars in 1919.

# Income Versus Goods

**P**RESSURE of income upon the supply of civilian goods is increasing. OPA forecasts that the national income will total 117 billion dollars in 1942, or about 22 billions more than in 1941. But the production of civilian goods is decreasing—will be smaller this year than last—possibly the smallest since 1939. To this year's production of civilian goods must be added, of course, the inventories of goods carried over from last year. Even so, the total supply of goods and the total of income will show divergent trends this year.

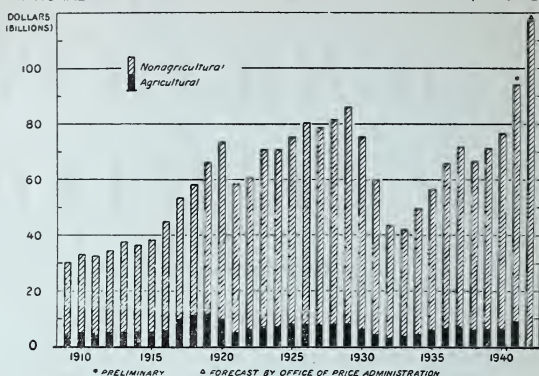
The Federal Government has put ceilings on prices, and instituted rationing and allocations programs. But

these alone are ineffectual in lessening the pressure of income on the supply of goods. Other necessary measures—as enumerated in the President's 7-point program—include the levying of higher taxes, the stabilizing of wages, the buying of War Bonds by the general public. As enunciated by the President, personal and corporate profits must be kept at a reasonable rate, prices of farm products must be stabilized, installment buying must be discouraged, debts and mortgages must be paid off.

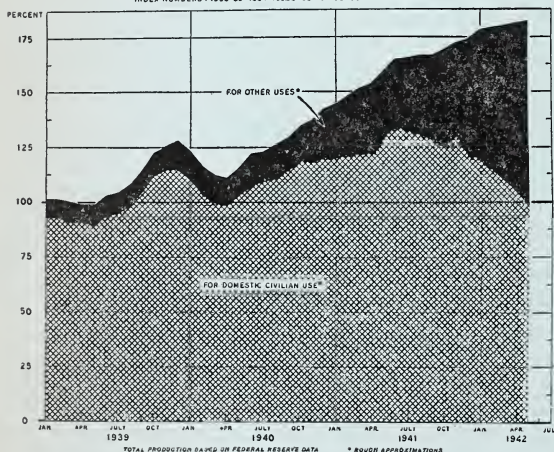
Consumer buying power must be reduced in line with the quantity of goods available—else prices will rise, regardless of general price control.

P. H. BOLLINGER.

NATIONAL INCOME AGRICULTURAL AND NONAGRICULTURAL, 1909-42



FACTORY PRODUCTION IN THE UNITED STATES, 1939-42  
 INDEX NUMBERS : 1935 38-100 : ADJUSTED FOR SEASONAL VARIATION



• Buy War Bonds •

# Commodity Reviews

## FOOD: Requirements

**B**IG NEWS of the month on the food front was the establishment of a Foods Requirements Committee within the War Production Board, having control over production and the allocation of all civilian and military food supplies. Chairman of the Committee is Secretary of Agriculture Claude R. Wickard. Other members include representatives of the State, War, and Navy Departments, Office of Lend-Lease Administration, Board of Economic Warfare, and the WPB Divisions of Industry Operations, Materials, and Civilian Supply.

The Committee, named by Donald M. Nelson as Chairman of WPB, will determine civilian, military, and foreign food requirements; it has authority also to step up or limit the domestic production of foods as well as the importation of foods and agricultural materials from which foods are derived. The Department of Agriculture will be responsible for (1) increasing or limiting domestic agricultural production in accordance with decisions of the Committee, (2) the earlier stages of food production in general, (3) the importation of foods and agricultural materials from which foods are derived, and (4) the formulation of programs for conservation of critical foods or agricultural materials from which foods are derived.

## PRODUCTION: Record

Signs continue to point at mid-year to a high record of agricultural production in 1942. Extraordinary production already has been achieved by the dairy, poultry, and livestock industries; similar achievements are expected by the producers of most of the food and feed crops. Larger acreages of practically all crops have been planted this year than last;

principal dependence for final outturns is now upon the weather. Granted good weather, all previous records of agricultural production in the United States may be broken.

Wheat will be a smaller crop this year than last, but the outturn of other small grains—oats, rye, and barley—will be larger. The hay crop may be the largest on record, and a large tonnage of sorghum forage is expected. The planting of corn was delayed by wet weather, but most of the seed was in the ground by June 1. A larger proportion of the acreage this year than last has been planted to hybrid corn—especially in States bordering the Corn Belt.

June reports indicated that the total output of fruits is likely to be moderately above average, and that prospects for vegetable crops have improved. Citrus fruits for harvest this summer will be in smaller supply than last year, but the orange and grapefruit crops that will begin to move next fall are likely to be large. Apples showed only average prospects in June, but the output of peaches, pears, cherries and California plums is expected to be well above average.

## FARM LABOR: Increase

The farm-labor situation presents a variable picture as the big 1942 crop growing and harvesting season gets under way. Experienced farm labor is not easy to get anywhere, and especially in areas where war industries are competing for labor. To help make up the deficiency in farm employment, many farmers are using increasingly the services of their families, and employing school youth during the summer vacation.

Farmers are working longer hours, using machinery more intensively, and employing whatever short cuts can be made in production practices. Federal



and State employment agencies are doing everything possible to bring farm labor and farm jobs together. Many farmers are pooling jobs, and in some places exchanging their own services.

National statistics of farm employment do not tell the whole story of farm labor. Even though totals showed more farm labor employed this June than last, exceptions included many important production areas, principally the New England and Pacific States where the demand for labor by war industries is especially heavy. Largest increase in farm labor this June over last was in the West South Central States where more than the usual number of women and children were helping with cotton chopping and other farm work.

Farm wages as a national average are the highest since 1920, about 20 percent higher than in June last year.

### PRICES: Lower

A year ago at this time, prices of farm products were rising rapidly. From May to September the advance

was approximately 25 percent. No similar rise is contemplated this summer; indeed, from May to June there was a slight decline as result of a lowering of prices of feed grains, bread grains, and cotton. The rise in prices paid for commodities bought by farmers also has been slowed.

National averages of prices received and prices paid by farmers are about

### Index Numbers of Prices Received and Paid by Farmers

[1910-14=100]

Year and month	Prices received	Prices paid	Buying power of farm products <sup>1</sup>
1941			
June.....	118	128	92
July.....	125	130	96
August.....	131	133	98
September.....	139	136	102
October.....	139	139	100
November.....	135	141	96
December.....	143	142	101
1942			
January.....	149	146	102
February.....	145	147	99
March.....	146	150	97
April.....	150	151	99
May.....	152	152	100
June.....	151	152	99

<sup>1</sup> Ratio of prices received to prices paid.

### Prices of Farm Products

[Estimates of average prices received by farmers at local farm markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and States]

Product	5 year average August 1909-July 1914	June average 1910-14	June 1941	May 1942	June 1942	Parity price June 1942
Wheat, bushels.....	88.4	89.0	83.1	99.8	95.7	134.4
Corn, bushels.....	64.2	68.4	68.3	81.4	81.9	97.6
Oats, bushels.....	39.9	41.8	33.3	51.6	46.5	60.6
Rice, bushels.....	81.3	12.7	<sup>1</sup> 113.6	177.5	171.1	123.6
Cotton, pounds.....	12.4	12.8	12.81	19.17	18.26	18.85
Potatoes, bushels.....	69.7	71.8	<sup>1</sup> 63.5	114.8	111.1	<sup>2</sup> 108.1
Hay, ton.....	11.87	12.16	7.82	10.82	10.00	18.04
Tobacco:						
Maryland, type 32.....	cents. <sup>3</sup> 22.9		30.0	29.8	33.0	21.8
Cigar wrapper, types 61-62.....	cents. <sup>3</sup> 84.4		75.0	80.0	80.0	80.2
Peanuts, pounds.....	4.8	5.2	4.01	6.30	5.51	7.30
Apples, bushels.....	dollars. .96	1.18	1.14	1.56	1.66	1.46
Hogs, hundredweight.....	do. 7.27	<sup>1</sup> 7.24	<sup>1</sup> 9.12	13.28	13.39	11.05
Beef cattle, hundredweight.....	do. 5.42	<sup>1</sup> 5.65	<sup>1</sup> 8.61	10.65	10.75	8.24
Veal calves, hundredweight.....	do. 6.75	<sup>1</sup> 6.77	<sup>1</sup> 9.91	12.45	12.43	10.26
Lambs, hundredweight.....	do. 5.88	<sup>1</sup> 6.31	<sup>1</sup> 9.49	11.62	11.99	8.94
Butterfat, pounds.....	cents. 26.3	23.4	35.7	38.6	37.4	<sup>4</sup> 36.6
Chickens, pounds.....	do. 11.4	11.9	16.3	18.4	18.5	17.3
Eggs, dozen.....	do. 21.5	16.7	23.2	26.5	27.4	<sup>4</sup> 25.8
Wool, pounds.....	do. 18.3	17.5	<sup>1</sup> 36.3	40.2	39.7	27.8

<sup>1</sup> Revised.

<sup>2</sup> Post-war base.

<sup>3</sup> Base price crop years, 1919-28.

<sup>4</sup> Adjusted for seasonality.

50 percent higher than in the 1910-14 base period—a relationship which should be maintained during the remainder of this year. In this way stability is achieved, a result vastly to be preferred to sharply fluctuating prices and price relationships. For a year now, the average of prices received by farmers has been practically at parity.

Production of civilian goods is declining rapidly now, while national income continues to mount. Thus the pressure of income upon available supplies of civilian goods increases, and the Government drive to lessen it through increased taxes and Government sales of War Bonds is intensified. Farmers are urged to reduce debts and to buy War Bonds as their part in helping to prevent inflation.

### MILK: Record

Half-way point has been passed in 1942 milk production with an unprecedented output of more than 62 billion pounds during the first 6 months. This compares with 59 billion pounds produced during the like period of 1941, and with 54 billion average during the 5 years 1936-40. An equivalent increase during the last half of 1942 would yield 58 billion pounds as compared with 56 billion produced in the like period last year: Total 120 billion pounds in 1942 as compared with 115 billion in 1941.

Production of creamery butter was smaller in the first half of 1942 than in the same period of 1941, but the output of evaporated milk, American cheese, and dried skim milk for human consumption was sharply higher. A substantial reduction in output of evaporated milk through diversion to butter and dried skim or dried whole milk is expected during the last half of the year. No official indication of cheese production during this period was available in late June.

Farmers likely will receive a higher average of prices for all milk sold during the last half of 1942 than in the

like period last year. Prices of evaporated milk may average lower, but both butter and butterfat prices should average higher as a result of the present guaranteed minimum price for butter. Prices of dried skim milk also are expected to average higher. Cash farm income of the dairy industry as a whole in 1942 will likely exceed 2 billion dollars, as compared with 1.9 billion in 1941. Production costs also are higher this year.

### EGGS: Big Supply

Poultrymen are well advanced toward a production goal of more than 50 billion eggs this year. Total production during the first 5 months of 1942 was 24.5 billion eggs, and the June output was considerably larger than in June last year when production totaled 4.1 billion eggs. Largest increases in production to date this year have been in the West North Central and South Central States.

Biddy is doing so well that despite extraordinary military and Lend-Lease requirements, the supply of eggs for civilian consumption in coming months will be bigger this year than last. But consumer demand is much stronger than in 1941, and prices received by producers are likely to continue to average higher this summer than last. Indications are that egg production will continue larger into 1943.

Market supplies of chickens will be considerably larger during the last half of 1942 than in the like period of 1941; nevertheless, prices received by farmers should average higher than in 1941, because of the strong demand for meats of all kinds. Commercial broiler production has been smaller to date this year than last, but the demand for broiler chicks has strengthened as a result of the improved relationship between broiler prices and feed costs.

### FEED: Supply

June reports indicated larger crops of oats and barley this year than last, and the supply of both of these feed

grains combined (including carry-over) for 1942-43 may be the largest on record. Farmers reported in March intentions to put in 5 percent more corn this year than last, but yields last year were unusually good. About the same acreage of grain sorghums this year as last is expected. \* \* \* Possibility is that the total supply of the four principal feed grains—corn, oats, barley, and grain sorghums—will be slightly smaller this year than last (principally on account of a smaller carry-over); meanwhile, the number of grain-consuming animals has increased. The supply of feed per grain-consuming animal unit may be 10 percent smaller in 1942-43 than in 1941-42, and smaller than the 1937-41 average. But the supply of high-protein, byproduct feed likely will be the largest on record.

### CATTLE: Expansion

Expansion in the cattle industry is slowing down. Whereas numbers of cattle and calves had increased by more than 3 million head in each of the last 2 years, the increase next January 1 over last may be only 2.5 million. Even so, the cattle industry will begin 1943 with the largest number of cattle and calves on record—approximately 77 million head, as compared with 75 million at the beginning of 1942. Much of the increase will be in the Great Plains.

The 1942 calf crop was probably the largest on record—approximately 32 million head, as compared with 31 million in 1941, and with 30 million in 1940. Slaughter of cattle and calves has been considerably larger to date this year than last, and the total for 1942 may be close to the slaughter goal of 28 million head. This compares with 26 million slaughtered in 1941, and with 24 million in 1940.

BAE found in late June that large numbers of cattle which ordinarily would have been bought for further feeding were going to slaughter instead. Continuation of this shift (attributed to price ceilings and a heavy military demand for beef) would

result in a considerable increase in commercial slaughter this August-November compared with last. Opinion was that total cattle and calf slaughter during all of 1942 will be 8 to 10 percent larger than in 1941.

### HOGS: Century Mark

Sixty-two million pigs were produced in the United States this spring, and a fall crop of 43.5 million in addition was indicated by the June pig survey. The combined spring and fall crops of 1941 totaled 85 million. The increase this year is the response of growers to a wartime demand that has been yielding \$14-hogs for several months past. Farmers' cash income from hogs this year may total close to 2 billion dollars—an all-time high record.

The Federal Government is buying a large part of the current output of hog products—for military and Lend-Lease export. The remainder for civilian consumption may be smaller than the civilian supply in 1941, but much of the difference will be made up in other meats. The combined per capita supply of meats for civilian consumption this year is expected to be at least as large as the 1931-40 10-year average, and considerably larger than the short supply in 1934 and 1936.

Problem will be the heavy marketing of hogs next winter and the straining of transportation and slaughtering facilities at that time. Government agricultural agencies now are trying to work out a marketing program designed to distribute the volume of shipments and slaughter over a longer period and to lessen the pressure on prices.

### LAMBS: Prices

BAE sees a favorable outlook for lamb prices during the next few months. Consumer demand is much stronger this year than last, but slaughter supplies of sheep and lambs during the remainder of the grass-lamb marketing season (through November) will be about the same as



during the like period of 1941. Lamb prices generally decline moderately during summer and fall, but prices are expected to continue well above those of last year. Lamb prices in late June were the highest since 1929. Prices are also above the minimum levels at which ceilings may be applied under the terms of the Emergency Price Control Act.

### WHEAT: Allotment

A national wheat allotment of 55 million acres for harvest in 1943 was announced last month under provisions of the Agricultural Adjustment Act. But wheat producers whose lands and equipment are suitable for growing other crops needed more urgently in the war effort were asked by Secretary Wickard to hold this land for those crops rather than plant it to wheat this fall. Goals and allotments for other farm crops will be determined by the Government this fall.

Secretary Wickard said that the United States will be going into the 1943 crop year with approximately a two-years' supply of wheat; that even with relatively low yields in 1943 the 55-million-acre allotment will result in supplies well above any probable emergency. He added that domestic food requirements of 500 million bushels could be produced on 40 million acres. Growers were urged also to plan now to use as much as possible of the current supply of wheat for livestock feed.

Wheat prices in June were the lowest in 8 months, the decline since mid-March being attributed largely to big supplies of "free" wheat, favorable crop prospects, and crowded storage facilities. It was anticipated, however, that prices will advance later in the year, following a period of seasonally low levels.

### COTTON: Acreage

The official estimate of cotton acreage on July 1 was 24,005,000 acres, verifying earlier indications that plant-

ings would be somewhat larger this year than last. Last year the total was 23.1 million acres, and the crop was 10.7 million bales. \* \* \* Prices recently have been below the 13-year high mark established in early April, and in mid-June the average in local markets in the South was below parity for the first time in several months.

Meanwhile, some concern has been felt over the heavy infestation of cotton insects in some areas. The demand for arsenicals has been unusually heavy, and by June 1 the manufacturers of calcium arsenate had delivered about 22 million pounds for insecticide purposes. An additional 8 million pounds was to be delivered by July 1, and another 16 million by August 1. Total for the season was scheduled at 50 million pounds—the same this year as last.

A study by BAE shows that cash to farmers per acre of cotton last year was the largest since 1919—averaging \$57.69 from cotton, cottonseed and Government payments, as compared with \$38.44 in 1940, and a low of \$13.12 in 1932. Highest cash return from cotton and cottonseed was \$69.25 per acre in 1919. Purchasing power of returns per acre of cotton harvested in 1941 (including Government payments) was 151 percent of the 1910-14 average.

### SUGAR: Rationing

Sugar is plentiful in the countries normally producing for the United States, but ships to transport this sugar to the continent are being used for war business instead. As a result, the supply of sugar in continental United States this year may be the smallest in more than 2 decades. A household and industrial rationing program was instituted early in May, and provision made later to make larger quantities available for home canning and preserving.

Production of sugar in North America, Central America, and the

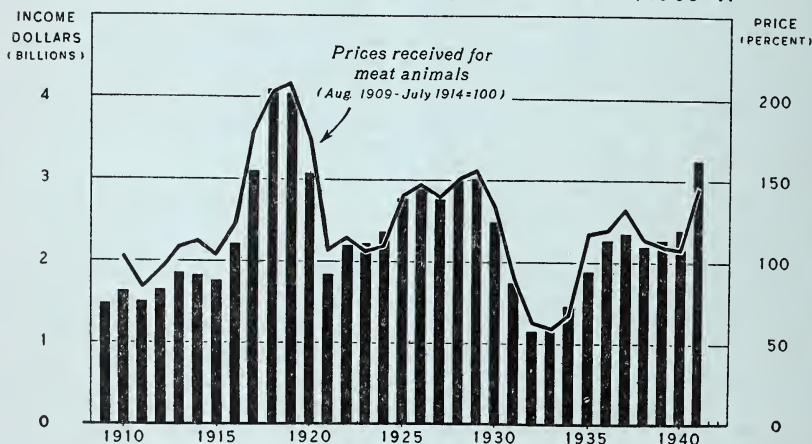
West Indies totaled 9.8 million tons (raw) in 1941, compared with 8.5 million in 1940, and with 8.9 million in 1939. Of the 1941 total the production in Cuba was 3.9 million tons, United States 2.0 million, Puerto Rico 1.1 million. Sugar-beet growers in the United States reported in March they intended to increase the acreage this year by nearly 24 percent. Beet-sugar production in the United States last year totaled 1.6 million tons.

United States supplies of supplemental sweetening products—edible sirups, molasses, and honey—in 1942 will be larger than in recent years. A substantial increase in the output of corn sirup and corn sugar is in prospect this year; the production of cane sirup, sorgo sirup, and edible molasses was larger in 1941 than in 1940; production of maple products was substantially larger this spring than last, and production of honey will likely be larger this year.

## DRIED FRUITS: Increase

Big supplies of dried fruits are needed this year for military use and Lend-Lease export. To induce growers to make big packs of natural dried fruits the United States Department of Agriculture has announced a purchasing program by AMA covering raisins (\$105 per ton), prunes (\$135), peaches (\$280), apricots (\$340), pears (\$220), apples (\$260). Processors also are to be requested to reserve a part of their 1942 pack for Government purchase at prices in line with those received by growers plus a reasonable margin for handling, processing, packing and shipping. Considerable quantities of fresh fruits also will be bought by the Government. Probability is that total supplies of fresh and processed fruits for civilian consumption will be smaller this year than last; prices will average higher.

MEAT ANIMALS: CASH FARM INCOME, AND INDEX NUMBERS OF PRICES RECEIVED BY FARMERS, UNITED STATES, 1909-41



Cash farm income from meat animals in 1941 totaled nearly 3.3 billion dollars—36 percent more than in 1940 and the largest since 1919. Most of the increase over 1940 was the result of much higher prices received by farmers, but total marketings also were larger than in 1940. Income from each of the three species of meat animals—hogs, cattle and calves, and sheep and lambs—increased in 1941, but hogs showed the most pronounced gain. Cash farm income from meat animals in 1942 may exceed 4 billion dollars—possibly set a new all-time high mark.

## TRUCK CROPS: Supply

Fresh vegetables—in larger supply this summer than last—are yielding higher prices in response to improved consumer demand. The production outlook for summer truck is good, the principal difficulty is in getting experienced labor to harvest the vegetables. State and Federal agencies are recruiting all available labor; in many areas women and high-school youth are helping harvest the crops.

Little information is available as to the output of so-called "Victory Gardens" this year, but Federal specialists are of the opinion that this will have little adverse effect upon the commercial demand for fresh vegetables. Little of the garden stuff will

be sold; practically all of it will be used to improve the diets of the families producing it.

More important to the truck crop growers are the "Victory Food Specials" designed to increase the consumption of vegetables in greatest commercial abundance. Producer, shipper, wholesaler, and retailer groups are cooperating with the United States Department of Agriculture to increase the commercial movement of products which because of abundance would otherwise be left unharvested and permitted to waste. Special merchandising campaigns are featuring such foods by means of store advertising and market displays.

FRANK GEORGE.

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## European Food Production— Now and After World War II

EUROPEAN production of food and feed in 1942 probably will be below the pre-war average and will be little larger than the reduced general output of 1940. Outside of Russia, the acreage of crops this year probably is as large as it was before the war. While there have been a number of adverse factors, the 1942 production will depend largely upon the weather between now and harvest.

Most of the continental countries had an unusually long and cold winter. The extent of actual damage to winter-grown grain is not known, but in view of the probability of above-average winter-kill and the lateness of spring a reduced output of bread grains is expected. This is substantiated by reliable reports that emphasis is being put this year on potato production rather than on grain production in Central and Northern Europe, and upon the production of corn, oil-bearing seeds and sugar rather than small grains in Southeastern Europe. Those areas which produce well may be called upon to contribute heavily to

the deficiencies in areas of short supply. The extent of distribution, however, depends largely upon German policy toward occupied and controlled areas and upon transportation facilities.

The virtual stoppage of sea-borne trade, the reduction in crop yields and diminution of livestock production have contributed to an acute food deficiency, especially in fats and oils, and particularly in countries formerly dependent to a considerable extent upon overseas supplies. Dislocation of land and inland waterways transport also have contributed to the deficiency. Distress is greatest in countries which have been compelled to contribute materially to the German conquest.

EXTRAORDINARY efforts are being made to produce food in the Axis and Axis-occupied countries. There is a shortage everywhere of manpower, but in most of Europe women and children normally do much of the farm work. The shortage of draft power is reflected more in shallow



plowing and late planting rather than in restricted acreages. The effect of the shortage of farm machinery is not so severe as it would be in the United States, since much of the work is done by hand and cows may be used to pull plows. The quality of seeding material has deteriorated and there is little prospect of marked improvement. There is a deficiency of essential fertilizers, formerly imported—especially of phosphates. The effects of these shortages and deficiencies are to reduce yields, a situation that will be intensified as the war continues.

While acreages of most field crops have tended to remain near pre-war levels, the livestock industry has deteriorated, beginning with the slaughter of large numbers of livestock in 1939-40, particularly in western Europe. Denmark and the Netherlands lost their export market in Great Britain. These two countries, as well as Belgium and northern France, were no longer able to get the imported concentrate feeds on which their livestock industry depended. Flocks and herds had to be reduced to numbers that could be fed on home-grown feeds. Part of the feeds formerly utilized in the industry are now required for human consumption, and numbers of cattle, swine, and poultry have been further reduced. In most of the occupied countries, the Axis powers have made heavy requisitions of livestock and animal products. Because of shortage of feed and reduction of livestock the production of milk, butter, eggs and meat has diminished and supplies for civilian use are small.

IT IS probably safe to assume there will be no material increase in the general level of European food supplies between now and the 1943 crop season. Strong effort is being made by German authorities to offset the reduction in imported livestock feeds and the virtual stoppage of imports of vegetable oils, through increased production of oil-bearing crops. This program may be helpful in some areas,

but the general deficiency in fats and oils is almost certain to persist. It also appears that further reductions in livestock may be unavoidable, especially if feed crops should again be poor this year. Such a development would in time be reflected in smaller supplies of animal fats and reduced meat rations.

Before the war, Continental Europe produced 95 percent of its bread-grain requirements, and 90 percent of the feedstuffs needed for its animal industry that not only supplied domestic requirements but also produced a surplus of butter, meat and eggs for export to Great Britain. Continental Europe was deficient, however, in edible fats and oils, importing about 40 percent of its requirements. When the war ends, this great food-producing machine still will be functioning although on a reduced scale.

QUANTITATIVE expressions of post-war relief needs can be based generally upon the usual volume of pre-war imports in practically all cases. However, immediate post-war food requirements probably will be larger than pre-war average imports because of the necessity for overcoming the detrimental effects of the shortage, for replacing—temporarily at least—part of the pre-war domestic production and for accumulating reserves. Post-war requirements for imported feedstuffs, however, probably will be smaller than pre-war average imports because of the drastic reduction in livestock numbers throughout the Continent.

The potential food situation in occupied countries will be improved because the heavy requisitions by the Axis powers will cease, making available a greater proportion of the production for local consumption. There is no question but that the rural population in every country will be found to have more than enough to feed themselves and that there will be greater or less local surpluses of all kinds of farm commodities for shipment to ur-



ban and industrial centers. Some countries may have surpluses for export.

However, it will be difficult to move such surpluses. Communication between producing and consuming centers within countries and between one country and another will be defective. Transportation facilities by rail, inland waterways, motor trucks and horse-drawn vehicles have been diverted from supplying the needs of civilians to the necessities of military operations. Rolling stock and road beds have everywhere deteriorated. Collection and distribution of farm products have been under the direction of the Axis powers and outside the Axis countries will have to be reorganized. Urban and industrial centers will be in want. The degree of distress will depend upon the ability of governments to assemble and ship food to these centers and upon the ability of people to buy such food as is offered on their markets.

**D**ESTRUCTIVE warfare has left hundreds of thousands of heads of families without the means of earning

purchasing power. Executions, death by disease and war have left other hundreds of thousands of families bereft of one or both parents and with no possibility of buying food. Homeless orphans and destitute families will be found everywhere—in Belgium, France, Greece, Netherlands, Norway, Poland, Spain, and Yugoslavia. In many cases the distressed areas are near the Atlantic or Mediterranean coasts and can be more speedily reached by organized relief from overseas than by the reorganization of the collecting and distributing of inadequate domestic supplies.

The length of the relief period is indeterminable and will be controlled by the agricultural reserves of the various European countries. It seems inevitable, however, that some form of relief must be maintained, at least until desirable levels of productive capacities have been substantially regained and the post-war reconstruction of the general European economy is well under way.

L. G. MICHAEL,

*Office of Foreign Agricultural Relations.*

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## Agriculture In a Gasoline Age

**A**S yet, there is enough gasoline available for essential farm use; and every effort is being made by Government agricultural agencies to make re-treads available for farm motor trucks. Nevertheless, farmers are taking more note of steel tractor wheels, and farm wagons and other horse-drawn equipment. In the months ahead, fuel supplies for tractors, motor trucks, and automobiles will be very essential to our war effort. Although the use of automobiles for personal activities can be restricted on farms as well as elsewhere, the use of automobiles is essential to the proper operation of modern farms. Savings in the use of motor fuel by farm automobiles and, to a less extent, by farm motor trucks can be made by closer

cooperation among farmers in the hauling of supplies to the farm and of products to market.

**R**ECENT surveys by the Bureau of Agricultural Economics reveal strikingly the dependence of modern agriculture upon motorized equipment for the production of farm products and their transportation to market. Farm production in World War I depended primarily upon man and horse power; production in World War II is dependent in the main upon man and motor power. Then, there were 25 million horses and mules on farms; now, there are fewer than 15 million. Then there were few tractors and trucks on farms; now there are 1.8 million tractors, more than 1 million

motor trucks and more than 4 million automobiles. Farm consumption of motor fuel for all purposes—principally in automobiles—totaled little more than half a billion gallons a year during World War I. The total in 1941 was more than 3.5 billion gallons—more than half of it in tractors and trucks. (Total United States consumption of gasoline last year was about 27 billion gallons.)

**T**HE adoption of machine power on farms was especially rapid during World War I and has increased tremendously since that time. Yearly consumption of farm motor fuel just after the close of World War I or during the period 1920–24 was almost ten times greater than the annual average use during the preceding 10-year period. But in recent years, farmers have been using about 200 percent more motor fuel than the yearly average of the early 1920's and about 50 percent more than was used in the early 1930's.

Fuel Consumption by Farm Machines,  
1910 to 1941

Period or year	Motor fuel consumed by				Total fuel con- sumed
	Farm auto- mo- biles	Farm motor trucks	Farm trac- tors	Sta- tion- ary en- gines	
	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.	Mil. gal.
1910-14...	26	1	42	41	110
1920-24...	611	82	330	61	1,084
1930-34...	1,242	324	742	67	2,375
1940.....	1,558	341	1,390	68	3,357
1941.....	1,600	360	1,520	70	3,550

For many years, more motor fuel was used in farm automobiles than in farm tractors and trucks. At the end of World War I about 60 percent of the total farm motor fuel was used by farm automobiles. Early in the 1930's slightly more than half of the total motor fuel was accounted for by farm automobiles, and less than one-third was used by farm tractors. In more recent years, however, the utilization of farm motor fuel by tractors in-

creased at a rapid rate. Tractors in 1941 used almost as much motor fuel as did all farm automobiles.

**F**ARM tractors this year will probably use well over half of the motor fuel consumed on farms. Tractor sales in 1941 were the largest on record, making the total on farms on January 1, 1942, about 1,800,000 tractors, compared with 1,665,000 at the beginning of 1941. The number of farm automobiles in use probably will average lower in 1942 than in 1941 because of the acute rubber shortage and gasoline rationing. Some decrease in the use of motor fuel by farm motor trucks also is likely this year as farmers make every effort to conserve rubber and gasoline.

Although it may be possible to restrict the use of tractors in some instances by a greater use of farm animals in the performance of light jobs, this possibility is not at all assured since more work as a result of increased production goals will be necessary. Were it not for the fact that rubber tires and gasoline in some sections need to be conserved, the use of motor fuels on farms in 1942 would undoubtedly be the largest ever.

**G**ASOLINE is the most common of motor fuels used on farms. Gasoline is used almost exclusively by all farm automobiles and by motor trucks. Other motor fuels such as kerosene, fuel oil, and Diesel oil formerly were used to a greater extent than gasoline for tractor fuel; but in 1940 gasoline provided more than two-thirds of the total motor fuel used by farm tractors. Only six percent of the tractor fuel was kerosene and the remaining 25 percent was made up of Diesel oil, fuel oil, and lesser petroleum products. Production of low-grade gasoline and the relatively narrow spread in price between the low grade gasoline, kerosene, and fuel oils have been important factors con-

tributing to the increased use of gasoline in farm tractors.

The Bureau of Agricultural Economics survey showed that gasoline was the principal tractor fuel in most States in 1940, but that in some of the South Central States where farmers did not receive rebates for taxes paid on gasoline used by tractors, only small quantities of gasoline were used as tractor fuel.

Average Fuel Consumption per Farm Tractor

Year	Gasoline	All other fuel	Total
	<i>Gallons</i>	<i>Gallons</i>	<i>Gallons</i>
1910.....	1,870	1,530	3,400
1920.....	368	552	920
1930.....	328	452	780
1940.....	600	269	869

**M**AINTEENANCE of supplies of motor fuel is of first importance in the Nation's endeavor to increase farm production. Machines powered by motor fuel must be kept running if farmers are to produce the extra food

and fiber that will be required by fighting men around the world this year and next. The supply of labor and animal power is the smallest in years. Farm power machines are used in all parts of the Nation primarily for heavy-duty jobs such as plowing and disking, for the harvesting of small-grain crops, and to a lesser extent for cultivation and a great many miscellaneous farm jobs. Because the number of work animals in the United States is the smallest in many years and since the number of horses probably will continue to decline, it is imperative that power machines on farms be used efficiently in the performance of heavy and light jobs if agricultural production is to continue to expand. Farm trucks and automobiles also have become an essential part of food production and distribution. Trucks and automobiles are used for hauling farm products to market, for moving labor to and from the farms, for bringing supplies to the farm, and in many other ways.

—A. P. BRODELL AND M. R. COOPER

## Guard Against Soft Pork

**H**OG producers this year will need to take unusual precautions to avoid an increase in production of soft pork—and the price discounts that usually go with it—as a result of record acreages of peanuts and soybeans.

Protection against market losses from soft pork is a community affair rather than an individual problem under prevailing market practices. Soft pork cannot be detected in live hogs, because the fat is fluid at body temperatures. Therefore, a market receiving an appreciable quantity of soft hogs from an area, usually discounts all hogs from that area—no matter how careful any individual producer may have been. It is also of national interest to make sure that adequate supplies of firm carcasses are available for shipment overseas to our armed forces and our Allies.

The bacon from soft carcasses is greasy and hard to slice; the lard does not harden at ordinary temperatures; the loins and hams are not firm. Such products are particularly unsuited for use by troops in the field, or under any other conditions where refrigeration is difficult.

**T**HE undesirable effects of feeding excessive quantities of whole soybeans are not confined to pork products. Soft butter may result from feeding ground soybeans to dairy cattle if they make up more than one-fourth of the concentrates. On the other hand, soybean oil meal can be fed to dairy cattle without affecting the hardness of the butter. Feeding tests have indicated that the soybean meal is fully as valuable as linseed



meal, cottonseed meal, or ground soybeans in the dairy ration.

Care in feeding—particularly in the soybean areas of the Midwest and the peanut areas of the South—will fulfill a double-barrelled objective. It will assure carcasses suitable to meet the requirements of lend-lease buying; and it will assure maximum extraction of oil from peanuts and soybeans, to meet other food and military needs.

Oily feeds such as whole peanuts, whole soybeans, mast, rice bran, rice polish, and flaxseed usually will cause a soft carcass if they form more than 25 percent of the ration. The body fat which hogs make from the nonfat elements of their feed is solid at room temperature, whereas the fat in these oily feeds is not. Since the fat in oily feeds is digested with little change, the degree of softness of the carcass will depend on the proportions of these fats.

**T**HE greatest danger of producing soft pork is in areas where it is common practice to hog off peanuts or to feed soybeans whole. The simplest safeguard is for the hog producer to sell his peanuts or soybeans to the processor. Once the oil has been taken out, there is no danger of soft pork from feeding the cake or meal. In fact, soybean and peanut cake and meal contain large amounts of protein and will afford a valuable supplement to the ration—especially in areas where there is commonly a shortage of protein feeds. Soybean hay and peanut hay, incidentally, will make a valuable feed for other classes of livestock after the soybeans or peanuts have been threshed out.

Prices of both peanuts and soybeans are so high that it would clearly pay farmers to harvest and sell these crops and buy corn rather than to feed them directly to hogs. In May 1942 peanuts for oil were worth about 4.1 cents a pound and soybeans about 2.9 cents, as compared with 1.8 cents or less for corn. Harvesting and picking costs of peanuts, which are avoided

when the crop is hogged down, are only about 1.0 cent a pound.

A less common cause of soft pork is light feeding. When a hog is not finished or is finished too slowly, the carcass will grade soft. Corn, which represents more than 75 percent of all the feed fed to hogs, contains 4 percent by weight of a fat which is liquid at ordinary temperatures. With a light ration little fat can be produced and most of it will be from the fat in the grain. However, light feeding should be less common this year than last because it is now profitable to feed hogs to heavier weights. The present hog-corn ratio is 17 compared to 12 a year ago.

**I**N the South, the discount for soft carcasses is usually from \$0.50 to \$1 per 100 pounds. The discount might be even more severe if a limited market willing to pay premium prices for "peanut-fed" hams had not been developed. The discount may run up to \$2 or more whenever large supplies of soft hogs are received. In the Midwest the discount is usually higher still, because there is no satisfactory outlet for the soft carcasses and the markets prefer not to have them at any price.

Discounts on soft pork may be heavier than usual this year, as an indirect result of the price ceilings on pork products. Farmers were receiving about \$14 a hundred for live hogs the latter part of May; and heavy Government buying of pork products is expected to keep the farm prices of hogs at a high level. The average margin between the price paid for 100 pounds of live hog at Chicago and the value of hog products derived from 100 pounds of live hog was \$0.77 for the first 4 months of 1942, compared to \$0.95 during the same period of 1941.

Receipts at all public stockyards were only 6 percent more during the first 4 months of 1942 than they were during the corresponding months of 1941. This means that the reduced margin in prices has not been offset by



increased volume. The reduced margin in a period of labor and material shortages may lead packers to use indirect means of covering their margins by heavier discounts on hogs coming from soft pork areas. The only protection an individual producer in such

an area would have would be to campaign among his neighbors for better feeding practices, or insist that buying should be done on the basis of the graded carcass rather than "on the hoof."

—JOHN W. KLEIN.

## Rice in a War Market

✓ **F**OR the second time in our history, a spectacular wartime price increase has drawn attention to rice as an important United States farm crop. Most prolific of grains—traditional symbol of fecundity—rice in this country ordinarily occupies only 2 percent as much acreage as wheat, but produces about 6 percent as much grain. Average yield approaches 50 bushels per acre and is remarkably stable from year to year, but because of expensive irrigation facilities costs of production per acre also are unusually high. In most years domestic prices for rice and wheat have been about the same—higher costs per acre of rice being offset by higher yields. In May 1942, however, the \$1.78 per bushel price for rice was 78 percent higher than the price of wheat, reflecting far different war conditions for the two commodities. Rice prices skyrocketed during World War I.

Total rice acreage in the United States in 1942 is expected to be the largest on record—nearly 1.5 million acres. In 1914 only 640 thousand acres were harvested, but acreage doubled within 6 years, and almost 1.3 million acres were harvested in 1920. Great difficulty was experienced in marketing United States rice after the first World War, since acreage declined only gradually to the 798 thousand acres reached in 1933. But from 1937 to 1940, annual harvestings were above 1 million acres, and by 1941 the impact of war had boosted plantings to more than 1.2 million acres. Average yields have been rising in recent years and the 1942 production should easily surpass all previous records, possibly

The farmers who operate the rice fields of America are feeling pretty good this year. They sold the 1941 crop for highest prices in years, and the outlook for 1942 is again bright. Government asked producers to increase the acreage by 6 percent this year over last; but the rice farmers upped this to 16 percent in March intentions reports. Unless storms at harvest time should reduce the crop, the United States production of rice in 1942 will be the largest on record.

Rice is one domestic crop especially favored by a war that cuts off Asiatic shipments to the Western Hemisphere. Our big export market is Cuba. Cuba will take most of our surplus rice this year, and seek more from other sources of supply. At expected 1942 prices a United States rice crop of 70 million bushels would yield producers about 100 million dollars. The 1941 crop yielded more than 64 million dollars.—Ed.

totaling as much as 70 million bushels. Production totaled 54 million bushels in 1941. The average for the preceding 10 years was 47 million bushels.

**B**UT United States rice production of even 70 million bushels a year is almost insignificant in the estimated total world production of more than 7 billion bushels. About 97 percent of the world's rice is produced in southeastern Asia. The relatively small quantities produced in the United States, however, are far in excess of consumption in the 48 States and over a third of the crop is normally sold in our territorial possessions and in

foreign countries. United States average consumption is very stable—usually about 6 pounds of milled rice per capita each year—although varying from a food of daily consumption in parts of the South to a novelty food in some Northern States.

Most of the rice produced in southeastern Asia is consumed in the Orient, but substantial export surpluses from Indochina, Thailand, and Burma normally furnish most of the rice consumed in the western world—except, of course, in the United States. Shipping shortages restrict the world's supply from these Asiatic areas during wartime, and now these surplus producing areas are controlled by the Japanese military forces. Consequently, nations friendly to the United States now look to it for the bulk of their rice imports, and this year there is a wartime market in sight for all the rice the United States can grow.

Our biggest foreign market is Cuba, where per capita consumption averages over 110 pounds each year. The United States has long had tariff preferences in the Cuban market, but rice from the Orient nevertheless continued to furnish Cuba with most of its rice imports until this war started. Consumption of rice is large throughout Latin America. In recent years the continent of South America became relatively self-sufficient in rice, largely because of increased production in Brazil, but a year ago that production was short. Price of United States rice, formerly following price movements for Asiatic rice in Latin American markets, is now determined independently by the large export demand for a limited supply.

**R**ICE is one of the oldest of cultivated crops in the United States, dating back to the eighteenth century when commercial production centered about the tidal rivers of South Carolina. After the war between the States, production shifted first to the lower Mississippi River delta, then to

the broad prairies of southwestern Louisiana and southeastern Texas. Smaller areas were later added in Arkansas and California. Today there are two main areas of rice production—the southern area, including the Louisiana, Texas, and Arkansas regions, and the California acreage of the Sacramento and San Joaquin valleys. Most rice—60 percent of it—is grown in the Louisiana-Texas area of the South.

Water is a limiting factor in rice production. In recent years principal acreage expansion has been in Texas, where considerably more land could be planted to rice this year if water and irrigation facilities were available. Methods of planting and harvesting rice are similar to those for other small grains, but the requirement for a constant depth of about 6 inches of water during the growing season involves expensive construction of pumping stations, canals, and terraces even in humid sections where rainfall may average over 50 inches annually. Some farms are furnished water by canal companies which collect a fifth share of the rice crop as water rent, others have their own pumps.

Bags, barrels, bushels, pockets—all are units of measurement in the United States rice trade. In much of the southern area, especially in Louisiana, rough or unhulled rice (termed "paddy" in the Orient and occasionally in the United States) as it comes from the thresher is stored in bags usually weighing about 180–190 pounds. Because of custom, small lots, and high moisture content, bulk storage is seldom practiced in Louisiana and east Texas, although common in other areas. Farm marketing in the South is on the basis of a 162-pound barrel of rough rice. A 45-pound bushel (3.6 bushels equaling one barrel) is the common unit for marketing in California and in a few sections of the South. Milled rice is sold in terms of "pockets," which are 100-pound bags used in the wholesale trade.

**I**N milling rice for human consumption, the primary object is to remove the hull and bran while preserving as many as possible of the kernels as whole grains. Rice with only the hulls removed—or “brown rice”—has greater vitamin value than rice more thoroughly milled, but, except for a limited sale as a health food, has no general demand—in addition, its keeping value is not very good, as it becomes rancid. Consequently, further milling is necessary to remove all the layers of bran, and to polish the kernels to a glossy appearance. Many markets also require that the milled rice be coated with glucose and talc. Whole grain milled rice, termed head rice, is the top product, followed by broken kernel rice separated as to size of particles. Usually each large lot of rice is milled separately, since quality differences in rice from different farms and different areas are marked. In a large mill the entire process involves only a day or two.

In weight, milled rice products are about 69 percent of the rough rice processed, but normally these milled products account for about 95 percent of the total value of rice products. About 20 percent of the weight of rough rice is hulls, with the remainder mostly bran except for a small percentage of rice “polish.” Bran and polish are good livestock feeds, but the hulls have little value and are usually burned as fuel in the rice mills or dumped.

Most farmers deal directly with the millers in marketing their rough rice. Buyers from the mills scour their surrounding territory, sampling and bidding on rice held by farmers at public warehouses or at farms. Exceptions are farmers selling through cooperative marketing associations, which market more than half the production of Texas, California, and Arkansas, but only a small part of Louisiana's crop. Chief considerations in the value of rough rice are the estimated yield of head (whole grain)

rice after milling, the estimated total yield of milled rice products, and finally the content of moisture, red rice, damaged kernels, and foreign material. Buyers ordinarily estimate these factors by rubbing a sample of unhulled rice on a rough block. The friction removes the hulls and some of the bran, and from the appearance of the kernels the buyer estimates the yield and quality of the potential milled rice. A more objective test has been devised and rough rice grades have been established by the United States Department of Agriculture, but trade practice so far has not adopted them except as an occasional check on the traditional sampling practice. Lack of an objective sample, of course, leads to numerous marketing difficulties since the basis for bargaining is always somewhat indefinite.

**F**ARMERS sell about half the rice crop in the harvest months from August through November, and the remainder through the winter and early spring. Rice milling is ordinarily considered a speculative business, and most millers prefer to reduce speculation as much as possible by avoiding heavy investment in rice inventories. Buying activity is therefore very slow on a declining market although very rapid on a rising market. There is no futures market in which millers can hedge to avoid risks of price change. From 1923 to 1927 a futures market was attempted at New Orleans, but trading was not sufficient for its success. Consequently, the milling industry is highly speculative when the market for rice is uncertain.

Cost of milling a barrel of rough rice in the South in 1941 was considered to be near 70 cents a barrel so that, when rough rice sells for more than \$5 a barrel, the value added by processing is less than 15 percent. Under the April 28 general price order, maximum prices for milled rice at retail and wholesale are now established at March 1942 levels, while maximum



prices at the mill are set under a May 22 order at a level that will maintain prices for farmers and millers near those existing in December 1941. Mill margins last year were considered ample and should not increase this year, especially since allowances usually made for speculative risk on the milled market will be minimized.

Leaders of the rice industry hope that farmers will utilize their bargain-

ing position on this assured market to accomplish needed improvements in rough rice grading, rice storage, and marketing practices. When the war is over and United States rice abroad again meets Asiatic competition, these improvements may mean the difference between disruption and stabilization for an important American industry.

—C. A. BOONSTRA.

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## Peruvian Trade Agreement

A RECIPROCAL trade agreement between the United States and Peru was concluded at Washington on May 7. It consolidates the political and economic forces of these two nations for a greater hemispheric war effort, and lays the foundation for a resumption of normal trade relations when the war is over. Broad national and hemispheric considerations such as these—rather than considerations of short-time economic gain to either nation individually or to any one economic group in particular—are the keystone of the agreement. The agreement will become effective July 29 following its joint proclamation by the President of the United States and the President of Peru on June 29, and will continue in force for an initial period of 2 years, subject to automatic extension.

Agricultural foods and fibers play a prominent role in this agreement. Lacking adequate domestic supplies of fresh fruits, Peru agrees to admit fresh apples, pears, and plums from the United States duty-free for a specified season each year. This season is from September 1 to the last day of the following February for apples; from July 1 to December 31 for pears; and from May 1 to October 31 for plums. These are the seasons

when our fresh fruit exports to Peru normally are at their peak. Needing substantial quantities of American wheat flour in the eastern part of the country beyond the Andes Mountains and centering around the headwaters of the Amazon River, Peru agrees to bind its existing moderate rate of duty (equivalent in 1940 to about 28 percent ad valorem) on this American product. Of the wheat flour imported into Peru in 1940 and valued at about \$91,000,<sup>1</sup> about \$83,000 was imported from the United States. Peru agrees also to cut its duties on American rolled oats (by 33½ percent); certain canned vegetables (by 50 percent); a variety of dried and canned fruits (by 50 percent); walnuts (50 percent); and flour of oats, rye, corn, rice, and farina (by 46 percent). Imports of all these agricultural products from the United States in 1940 were valued at about \$199,500.

THE United States, on the other hand, has insufficient supplies of crude pyrethrum, not containing alcohol; cinchona and similar barks,

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<sup>1</sup> Peruvian values in this article are converted into United States currency at the rate of one sole to 16.21 cents.



coffee, crude or unmanufactured barbasco root; oiticica oils (expressed or extracted); quinine sulphate and cinchona bark derivatives; unground ginger root not preserved or candied; tamarinds and raw goat and kid skins. To encourage Peruvian producers and exporters to supply us with larger quantities of these products, the United States agrees to bind these products' upon its duty-free list. All of these commodities, except crude pyrethrum, oiticica oils and guano had been bound on the free list in previous trade agreements. The United States agrees also to bind its existing duties on imports of flax, including tow, noils, and straw, which duties had been reduced in earlier agreements by the maximum amount permitted in the Trade Agreement Act.

United States' duty reductions are made in the agreement on processed pyrethrum and derris, tube (or tuba) root not containing alcohol; processed barbasco root not containing alcohol, coca leaves, hemp and hemp tow, and ginger root (except the unground)—practically all of which complement our own national production.

THE agreement reduces the duties on alpaca, llama, and vicuña hair entering the United States by amounts ranging from 43 percent to 50 percent, depending upon the condition in which it is imported. None of this hair is produced domestically. Apparent consumption in 1939 was less than 1 percent of that of apparel wool.

The agreement also reduces the duty on sugar imported from all full-duty countries by 50 percent—from \$1.875 per 100 pounds of 96° sugar to \$0.9375. Imports of sugar into the United States were limited by quotas from 1934 until April 13, 1942, when the President suspended these quotas in order to make additional supplies of foreign sugar potentially available to domestic consumers during the emer-

gency. The present reduction in duty, coupled with the suspension of the quotas, should encourage Peruvian producers to export some additional quantities of sugar to this country.

IN the Tariff Act of 1930 the duty on long-staple cotton (1½ inches or more in length) was fixed at 7 cents a pound. In the agreement with Peru this duty is reduced to 3½ cents a pound. The agreement does not increase the annual over-all quota of long-staple cotton—established by Presidential proclamation on September 20, 1939, under Section 22 of the Agricultural Adjustment Act of 1933—that is permitted to enter the United States from abroad. It does, however, commit this Government to request the United States Tariff Commission to make an investigation under Section 22, to determine whether it would be possible at this time to terminate the existing long-staple quota allocations by countries, while leaving the over-all import quota precisely where it now is (45,656,420 pounds).

Should the Tariff Commission upon investigation conclude that these country allocations can be deleted from within the existing over-all quota and the President issue a proclamation to this effect, Peru and other countries individually no longer would be guaranteed a specified part of the United States market for imported long-staple cotton. Instead, each country would be free to compete for as much of the over-all quota as it could get in any one quota year; and once that quota was filled, all entries would cease until the next year.

(All raw cotton entered this country free of duty during most of the 1920's. The assumption seemed to prevail that no one would "carry coals to Newcastle," or else that it was bad strategy for the United States—itsself the world's leading exporter of shorter-staple cotton—to set other countries the example of raising trade barriers against possible cotton imports.)

\* This action does not affect coffee imported into Puerto Rico.

One further point is to be noted. The United States Department of Agriculture announced on April 24 that, acting through the Commodity Credit Corporation, it had agreed to purchase up to about 200,000 bales of Peru's 1942 cotton crop, the quantity approximating the 1942 surplus. It was agreed, further, that the surplus of future crops also would be purchased, until the close of the war.

**L**ONG-STAPLE cotton normally is Peru's most important export crop. In 1940 it accounted for over half (value) of that country's agricultural exports. Its uniformity, roughness, and tensile strength makes it suitable for the manufacture of underwear, part-wool textiles, cotton duck, and other strong fabrics. It could be used in the war effort to eke out our short supplies of wool. Production during the 5-year period 1934-35 to 1938-39

averaged about 378,498 bales (478 pounds) yearly. About 90 percent of the crop normally is exported to Europe and the Orient, while only 4,113 bales annually have been permitted entry into the United States under the quotas. Under war conditions, Peru's major foreign markets are virtually closed. As Peruvian production centers in the irrigated valleys of the arid coastal plain—and this area is highly restricted—there appears to be little possibility of the planted acreage expanding materially.

United States production of long-staple cotton during the 1937-39 period averaged about 840,000 bales (500 pounds). This approximated 6 percent of the domestic production of all staple lengths (14,235,000 bales) during this pre-war period.

—LOUIS C. NOLAN.

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## Farm Tenure Changes in the South

**E**XTENSIVE changes in the tenure status of Southern farm people during the past decade are indicated by 1940 census data for 15 Southern States. The general effect was a loss of tenure status for many farm people. The changes have been more severe in some areas than in others, and in some places farmers have made nominal tenure gains. For example, there was an increase during the decade of 137,446, or 11.6 percent, in the number of farms operated by full owners and some of these new owner-operated farms appeared on good land in the Mississippi Delta. The majority, however, were in the poor land areas of the Appalachian Highlands, the Ozarks, and the Piney Woods and the new owner operators were hardly better off than they had been as non-owners. A considerable part of the loss in tenure status was through the dropping of tenants from the status of

farm operator to that of wage laborer.

In West Virginia, a State entirely within the Appalachian region, there were 83,401 more rural farm people in 1940 than in 1930 and the population growth was accompanied by an increase of one-fifth in the number of farms. At the same time, farms in this area, as in other poor land areas, grew markedly smaller. A relatively large number were operated by owners, but the incomes from these farms are so small that the operators, even as owners, require supplemental income either from work on larger commercial farms or from industrial employment. Many of the small operators have been dependent on relief or are in dire want.

**I**N the 15 Southern States, there were 341,125 fewer tenant farms in 1940 than in 1930. Many renters and sharecroppers, particularly those

who were closely supervised, have dropped from the operator class to that of wage laborer. Alabama, Arkansas, Georgia, and Texas had a net loss of 189,791 sharecroppers, a reduction of 45 percent, while the loss for the entire South was 234,987, or 30 percent. The number of renters declined by 106,138, or 10 percent. They disappeared most rapidly in Texas and Mississippi where many of them had worked on plantations and were supervised very much as sharecroppers. Some of these people both croppers and renters, have remained on the same farms and continue to work there. Now they are paid wages instead of a share of the crops. During the production period, sharecropper and renter families were usually advanced living expenses by the landlord and the amount of the advances or "furnish" frequently equalled the value of their share of the crops. Accordingly, they may have lost very little by the change to labor status, since by purchasing for cash out of weekly or monthly wages, they can buy at lower prices. But in some respects there were losses. The change to labor status gives the family less tie to the land and probably the family will move more frequently. Moreover, laborers produce less foods for home use than do renters or sharecroppers.

Colored operators decreased at a much more rapid rate (22.8 percent) than did white operators (0.6 percent); colored renters were reduced by 32.2 percent, while the number of white renters declined only 1.1 percent. On the other hand, landlords apparently eliminated white croppers much faster than colored croppers—there was a decrease of 36.9 percent for the former and 23.9 percent for the latter. Landlords who supervise their tenants closely prefer colored to white, but when responsibility for management is placed upon the tenant, whites are preferred.

There were fewer family-sized farms in the South in 1940 than in 1930, as

there were fewer in the country as a whole. With the increase in farms of 100 acres or more, many renters and croppers were eliminated from agriculture or their status was changed to laborers. Consolidation occurred primarily in the Mississippi Delta, the Piedmont, and the Black Prairie areas of Alabama, Mississippi, Texas, and the Blue Grass regions of Kentucky and Tennessee. Small farms, particularly those below 10 acres, increased 47 percent in number. The new small farms are apparently those of part-time and subsistence farmers in the Appalachian, Ozark, and Piney Woods areas, and the cotton-mill area of the Piedmont.

THERE were only about 30,000 more rural farm people in the Southern States in 1940 than in 1930, an increase that is obviously little in an area having a total population of 16,255,202 rural farm people in 1940. Inasmuch as this rural area has one of the highest birth rates in the country, it is plain that many people have left the farms. Net migration from farms totaled more than 3,000,000 people during the decade.

Where have these people gone? Some have gone to villages and cities both within and outside the South. The rural nonfarm and urban population of the South increased much more rapidly than the almost-stable birth rate can account for and part of the increase is doubtless the result of migration from rural farm areas. The rural nonfarm population increased 16 percent while urban population increased 17.8 percent or a total of 3,564,318 people. Unfortunately, migration from rural farm areas has been heaviest from the better lands of the East and the Western Plains. Relatively fewer people have left the Appalachian and Piney Woods areas where population is excessive in terms of the ability of resources to support the people at an acceptable level of living.

During the early 1930's, the rural population increased rapidly because



of the return of unemployed industrial workers to their original homes and the drying up of urban industrial opportunities, which discouraged other farm people from migrating out of rural areas. More recently, because of the renewed industrial activity, many rural farm laborers are again migrating to urban industrial areas or have turned to industrial work in the immediate vicinity.

In the better and less rugged areas, reductions in cash crop acreages and increased farm mechanization have combined to reduce the demands for farm labor, and there has been some decline in rural farm population.

Seasonal labor requirements are being met from nearby villages to which the displaced families have migrated. The smaller loss here will be taken up by permanent adjustments in farm organization that will preclude any return of laborers when the demands of industry are reduced.

The real problem will be in the rougher land areas from which large numbers have migrated. It is here, unless energetic efforts are made to prevent it, that unneeded labor will pile up, further aggravating the population-resource problem.

BUIS T. INMAN.

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## We Need More Starch

UNITED STATES requirements for starch and starch products this year may total more than 4 billion pounds. In pre-war years our requirements were less than 3 billion pounds. The increase is needed this year to meet extraordinary wartime requirements of textile mills, to obtain larger quantities of corn sirup and corn sugar as food sweetenings, and to meet increased export requirements. The usefulness of starch lies in its adhesive properties, its ready conversion into forms of sugar, and its value as a direct human food.

More than half of the billions of pounds of starch each year is converted into corn sirup, corn sugar, and dextrines. The remainder is used directly as starch in industrial or food consumption. Corn sirup is a sweetening familiar to everyone and corn sugar is a simple sugar for some food requirements, while dextrines are the adhesives which stick when moistened (of the type used on gummed paper). Food, textile sizing, other adhesive manufacture, and paper manufacture are next in line in starch requirements. Laundries use substantial quantities, as do various lines of wood manufacture.

OUR mid-western Corn States furnish most of the starch used for all these purposes. Last year more than 110 million bushels of corn—about 4 percent of the 1941 crop—were ground and processed into 3.7 billion pounds of starch. This year, production will undoubtedly be larger. Besides increased industrial requirements, we have new food demands for corn sirup and corn sugar to replace our rationed beet and cane sugar. Also, under lend-lease terms, our exports of cornstarch this year may be increased above the annual 200 million pounds of recent years.

But, in spite of the fact that domestic cornstarch always has supplied more than 80 percent of our starch requirements, war still manages to interfere with our normal starch consumption. The reason is that, although chemically all starches are similar, physically their characteristics vary with their plant sources. For some uses tapioca starch, made from the roots of the bitter cassava which grows in the tropics, is preferred to cornstarch. In recent years we have been importing from 300 to 400 million pounds of starch, mostly tapioca.



Almost all of this came from the Netherlands East Indies, now under Japanese control.

Increased production of cornstarch, of course, can replace most of these imports, but for particular uses—adhesives for gummed stamps, envelopes, paper, and in surgical dressings and for fine veneers and textiles—tapioca starch is regarded as almost indispensable. Fortunately, imports of tapioca from Cuba, the Dominican Republic, and Brazil can be expanded to help meet our most pressing requirements. But there will remain some inconvenience in the use of less preferred cornstarch where tapioca has been preferred but is not indispensable. And we may have to do without tapioca as a food—scarcely a significant deprivation to most Americans.

POTATO starch is also manufactured in the United States, although it is seldom as much as 1 percent of our total starch production. But for many uses potato starch is considered the finest of all starches, consequently its importance is far greater than indicated by its volume. In many uses it is preferred to tapioca, but since potato starch sells at highest prices its use has never been general where cheaper starches would do.

Production, largely from white potatoes, is highly variable from year to year since grinding for starch is principally a use for cull potatoes in the commercial areas of Maine. Exceptions are years when prices of potatoes are low and surplus stocks are large so that potatoes of marketable grade also are ground for starch. These conditions in 1940-41 resulted in a record production of 54.5 million pounds of starch ground from 8 million bushels of white potatoes. In the potato season just closed, however, prices for potatoes were higher and production was probably less than half that in 1940-41.

High prices for root starch will not draw out greater production in 1942-43, since production reacts to prices of

potatoes rather than to prices of starch and potato prices are expected to be relatively high all this year. Some high quality sweetpotato starch is being produced in the South, but production is relatively small in the national total.

AS things appear, the tapioca starch we can still import plus our production of potato starch will care for little more than our indispensable requirements for root starch having the desired physical characteristics. We will miss tapioca pudding, and we may find changes in the character of some adhesives and textiles which will now use cornstarch. But as the years pass, scientists are developing new sources of quality starch. Most promising is a waxy variety of corn producing a starch with characteristics which have given root starch its preferred uses. Already the seed of this waxy corn has been planted on a large enough scale to assure commercial plantings in 1943. Further development of starch from potatoes, and especially from high-starch content sweetpotatoes, may also be in prospect for home and industrial use.

C. A. B.

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## MAPLE SIRUP: Good Run

The run of sweet sap was unusually good this spring, yielding a total of 2.9 million gallons of sirup and 654 thousand pounds of sugar. Weather was nearly ideal east of the Ohio River, but less favorable west of the Ohio. Production in 1941 was 2 million gallons of sirup and 387 thousand pounds of sugar. More than 9.8 million trees were tapped in 10 States this season, compared with less than 9.8 million in 1941. Leading producing States this season were Vermont (1.3 million gallons of sirup and 320 thousand pounds of sugar) and New York (933 thousand gallons of sirup and 177 thousand pounds of sugar).

# Economic Trends Affecting Agriculture

Year and month	Industrial production (1935-39 =100) <sup>1</sup>	Income of industrial workers (1935-39 =100) <sup>2</sup>	Cost of living (1935-39 =100) <sup>3</sup>	Whole- sale prices of all com- modities <sup>4</sup>	1910-14=100			Farm wage rates	Taxes <sup>6</sup>
					Prices paid by farmers for commodities used in \$—				
					Living	Produc- tion	Living and produc- tion		
1925	90	126	125	151	164	147	156	176	270
1926	96	131	126	146	162	146	155	179	271
1927	95	128	124	139	160	144	153	179	277
1928	99	127	123	141	160	148	155	179	279
1929	110	134	122	139	159	147	154	180	281
1930	91	110	119	126	150	141	146	167	277
1931	75	85	109	107	128	123	126	130	254
1932	58	59	98	95	108	109	108	96	220
1933	69	61	92	96	108	108	108	85	188
1934	75	76	96	109	122	123	122	95	178
1935	87	87	98	117	124	127	125	103	180
1936	103	100	99	118	123	125	124	111	181
1937	113	117	103	126	128	136	131	126	186
1938	89	91	101	115	122	125	123	125	183
1939	108	105	99	113	120	122	121	123	186
1940	123	119	100	115	121	124	122	126	183
1941	156	163	105	127	131	131	131	154	—
1941—June	159	167	105	127	129	128	128	—	—
July	160	173	105	130	130	129	130	160	—
August	160	174	106	132	134	132	133	—	—
September	161	177	108	134	136	135	136	—	—
October	163	178	109	135	140	138	139	165	—
November	166	180	110	135	142	139	141	—	—
December	167	187	110	137	143	141	142	—	—
1942—January	171	196	112	140	146	145	146	166	—
February	172	194	113	141	147	147	147	—	—
March	171	194	114	142	150	149	150	167	—
April	173	202	115	144	152	149	151	177	—
May	176	—	116	144	153	150	152	—	—
June	—	—	—	144	154	150	152	183	—

Year and month	Index of prices received by farmers (August 1909–July 1914=100)							Ratio prices received to prices paid
	Grains	Cotton and cotton-seed	Fruits	Truck crops	Meat animals <sup>8</sup>	Dairy products	Chickens and eggs	
1925	157	177	172	153	141	153	163	100
1926	131	122	138	143	147	152	159	94
1927	128	128	144	121	140	155	144	91
1928	130	152	176	159	151	158	153	96
1929	120	144	141	149	156	157	162	95
1930	100	102	162	140	134	137	129	86
1931	63	63	98	117	92	108	100	69
1932	44	47	82	102	63	83	82	60
1933	62	64	74	105	60	82	75	65
1934	93	99	100	103	68	95	89	74
1935	103	101	91	125	117	108	117	86
1936	108	100	100	111	119	119	115	92
1937	126	95	122	123	132	124	111	92
1938	74	70	73	101	114	109	108	77
1939	72	73	77	105	110	104	94	76
1940	85	81	79	114	108	113	96	80
1941	96	113	92	144	144	131	122	93
1941—June	96	107	97	126	142	126	118	92
July	98	121	93	120	151	132	127	96
August	99	128	100	136	155	135	130	98
September	106	150	89	161	163	140	141	102
October	101	144	107	161	154	145	146	100
November	103	136	98	158	149	148	157	96
December	112	138	98	162	157	148	153	101
1942—January	119	143	102	204	164	148	147	102
February	121	150	98	161	173	147	135	99
March	122	151	111	136	180	144	130	97
April	120	158	118	158	190	142	131	99
May	120	159	131	152	189	143	134	100
June	116	153	148	169	191	141	137	99

<sup>1</sup> Federal Reserve Board, adjusted for seasonal variation. Revised September 1941.

<sup>2</sup> Adjusted for seasonal variation. Revised November 1941.

<sup>3</sup> Bureau of Labor Statistics.

<sup>4</sup> Bureau of Labor Statistics index with 1926=100, divided by its 1910-14 average of 68.5.

<sup>5</sup> Revised basis averages of 12 monthly indexes.

<sup>6</sup> Index of farm real estate taxes per acre. Base period represents taxes levied in the calendar years 1909-13, payable mostly within the period Aug. 1, 1909-July 31, 1914.

<sup>7</sup> Preliminary.

<sup>8</sup> Revised.

NOTE.—The index numbers of industrial production and of industrial workers' income shown above are not comparable in several respects. The production index includes only mining and manufacturing, the income index also includes transportation. The production index is based on volume only, whereas the income index is affected by wage rates as well as by time worked. There is usually a time lag between changes in volume of production and workers' income, since output can be increased or decreased to some extent without much change in the number of workers.